

**WHAT IS CLAIMED IS:**

1. A cooling system for an oxygen based metallurgical converter having a vessel supported in a trunnion ring, the trunnion ring having an interior surface and a portion of the vessel being in a spaced relationship from the interior surface of the trunnion ring, said cooling system comprising:

- (a) one or more cooling panels;
- (b) each of said cooling panels includes a bracket for coupling said cooling panel to the trunnion ring, said cooling panels being mounted to the surface of the trunnion ring and being positioned adjacent the vessel;
- (c) each of said cooling panels having an inlet for receiving a coolant, and an outlet for outputting the coolant; and
- (d) the inlet of each of said cooling panels being coupled to a coolant supply, and the outlet of each of said cooling panels providing a drain outlet for the coolant.

2. The cooling system as claimed in claim 1, wherein said cooling panel comprises a network of conduits for circulating the coolant inside said cooling panel between said inlet and said outlet.

3. The cooling system as claimed in claim 1, wherein said bracket includes a threaded fastener for securing said cooling panel to the trunnion ring.

4. The cooling system as claimed in claim 1 or 2, wherein said cooling panels are detachably mounted to the trunnion ring, and the cooling panels are detachable for replacement or repair.

5. An oxygen based metallurgical converter comprising:

- (a) a converter vessel;

- (b) a trunnion ring for carrying the vessel;
- (c) a drive mechanism coupled to the trunnion ring and being operable for tilting the converter vessel;
- (d) a plurality of cooling panels, each of said cooling panels having a mounting bracket for coupling the cooling panels to the trunnion ring, said cooling panels being located between said trunnion ring and said vessel;
- (e) each of said cooling panels having an inlet for receiving a coolant, and an outlet for outputting the coolant; and
- (f) the inlet of each of said cooling panels being coupled to a coolant supply, and the outlet of each of said cooling panels providing a drain outlet for the coolant.

6. The cooling system as claimed in claim 5, wherein said cooling panel comprises a network of conduits for circulating the coolant inside said cooling panel between said inlet and said outlet.

7. An argon oxygen decarburization converter comprising:

- (a) a converter vessel;
- (b) a trunnion ring for carrying the vessel;
- (c) a drive mechanism coupled to the trunnion ring and being operable for tilting the converter vessel;
- (d) a plurality of cooling panels, each of said cooling panels having a mounting bracket for coupling the cooling panels to the trunnion ring, said cooling panels being located between said trunnion ring and said vessel;
- (e) each of said cooling panels having an inlet for receiving a coolant, and an outlet for outputting the coolant; and
- (f) the inlet of each of said cooling panels being coupled to a coolant supply, and the outlet of each of said cooling panels providing a drain outlet for the coolant.

8. The cooling system as claimed in claim 7, wherein said cooling panel comprises a network of conduits for circulating the coolant inside said cooling panel between said inlet and said outlet.